

Two New Species of *Echinoderella* (Phylum Kinorhyncha) from the Bay of Bengal

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(With two plates)

The phylum Kinorhyncha or Echinodera is small and little known to the general zoologist. All the representatives of this phylum are marine and under 1 millimetre in length. No kinorhynchs have previously been reported from the Bay of Bengal. The two species described in this paper were obtained from screenings of bottom mud exposed at low tide on Sonadia Island near Cox's Bazar, East Pakistan. They were collected in January, 1956.

Identification of the Kinorhyncha is based on body dimensions to some extent, but especially on the number, position, and length of the various spines and setae. The difficulty of identification results from their small size and relative scarcity. It has been assumed that there is little variation in body dimensions within a species and an absolute fixity of the number, position, and length of the spines. The presence of one species in our collection in large numbers enables us to throw some light on this assumption. Within a single population, at least, there seems to be an exceedingly limited range of variation.

A further difficulty in identification comes from the fact that the only difference between the genera *Echinoderella* and *Echinoderes* is the presence of pigmented eyespots in the latter and their absence in the former. However, it is well-known that the pigment of the eyespots fades after formalin fixation. Hence, observation must be made of specimens in life or shortly after fixation in order to distinguish between these two genera.

DESCRIPTION

The body of both the new species of *Echinoderella* is divided into 13 tergites or zonites. Each zonite consists of one dorsal or tergal plate and two ventral or sternal plates. Overlapping the posterior margins of zonites 3 to 12 are rows of tiny spines or setae. There are relatively fewer scattered larger setae on the surface of these zonites.

The anterior zonites bear more scattered setae than the posterior; setae are lacking near the mid-ventral line.

The first zonite forms the head, covered with circlets of spines or scalids. The head is retractile within the second zonite, which is covered by 16 little plates or placids. At the anterior margin of the placids are found specialized scalids, consisting of a cuticular plate and 2 setae with bristles. At the anterior of the head is an oral cone containing the oral stylets. The short oesophagus opens into a muscular pharynx, which empties into a straight tubular intestine. Pigmented eyespots are lacking in both species.

Echinoderella bengalensis new species (Fig. 1, A).

Length extended 400-438 μ , excluding the tail spines. Length retracted 350-368 μ . Maximum body diameter 58-77 μ . Ratio of length to breadth 7:1 to 5.7:1. Lateral spines on zonites 7 and 10, 15 μ long. Mid-dorsal and sublateral spines absent. Paired tail spines, 67-77 μ long. Anal cerci 23 μ long. Scalids 36 μ long. Two pairs of penial setae or copulatory spicules protruding from the tail end of the male, just to the inside of the anal cerci, 32 μ long. Paired ovaries in the female on either side of the intestine. Three mature ova observed in one female, two on one side and one on the other, measuring about $80 \times 45 \mu$.

Cotype specimens: Personal collection, K 1.

Echinoderella sonadiae new species (Fig. 1, B).

Length extended 248 μ , excluding the tail spines. Maximum body diameter 60 μ . Ratio of length to breadth 4:1. Mid-dorsal spines on zonite 11 and at the border of zonites 10 and 11, 38 and 27 μ long respectively. Sublateral sclerotized spines on zonites 4-13, the longest about 23 μ . Paired tail spines 48 μ long. Anal cerci 15 μ long. Scalids about 22 μ long. (3 specimens were observed but 2 were lost before measurements were taken.)

Holotype female: Personal collection, K 2.

DISCUSSION

In their particular combination of several characters the two species of *Echinoderella* described in this paper are seemingly new to science. From observation of 25 specimens of *E. bengalensis* it was found that the lateral spines are not always observable. Sometimes they are pressed close to the body and are seen only after careful focusing with an oil immersion lens. In a few specimens the anterior pair of spines seems to be lacking entirely. Therefore, the erecting of new species on the basis of number of dorsal, sublateral, or lateral, spines is a risky procedure unless observation is made of several specimens.

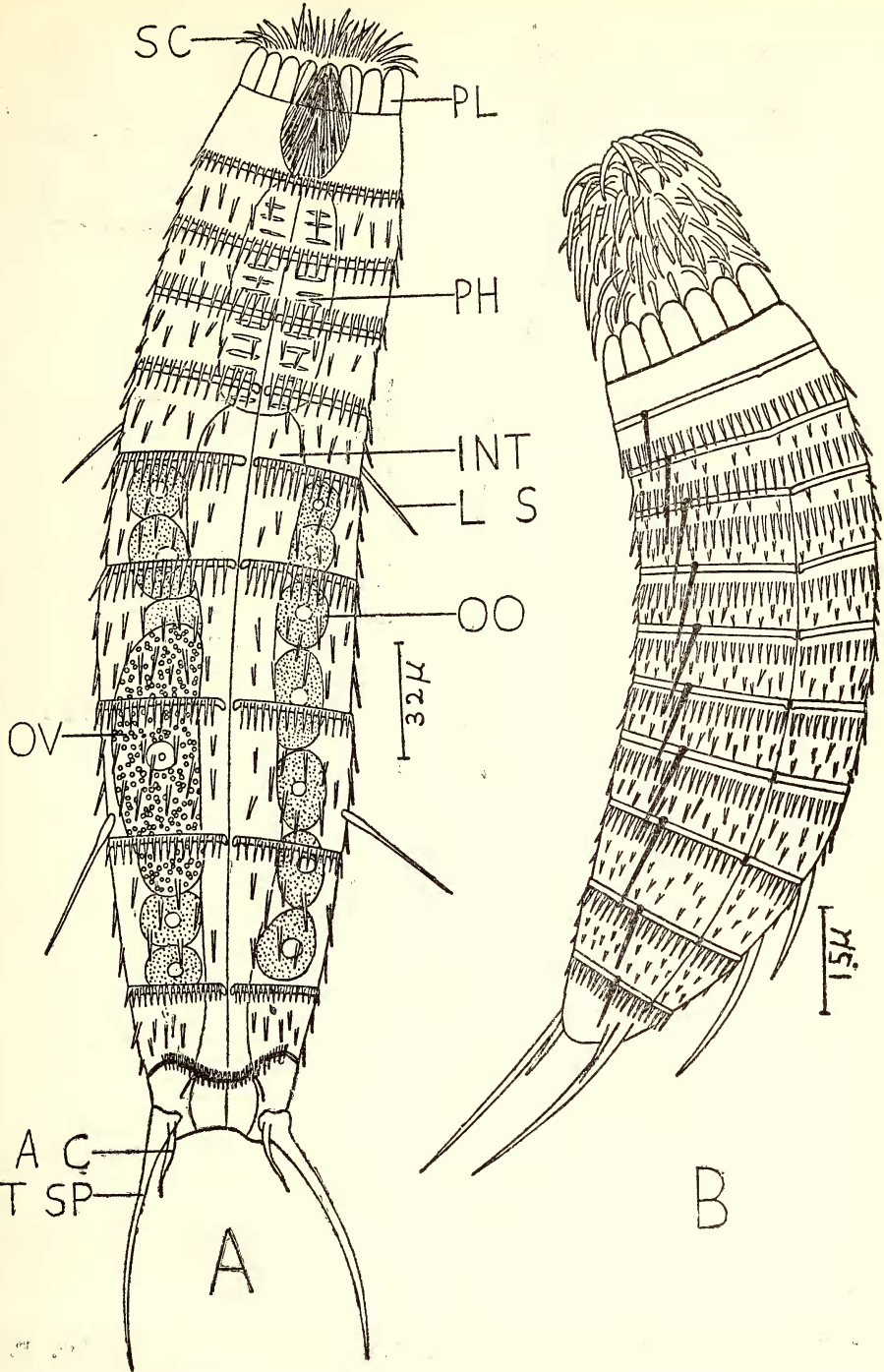


Fig. 1 A. *Echinoderella bengalensis* n.sp., ventral view. B. *Echinoderella sonadae* n.sp., lateral view.

AC—anal cercus ; INT—intestine ; LS—lateral spine ; OO—oogonium ; OV—ovum ; PH—pharynx ; PL—placid ; SC—scalid ; TS—tail spine.